

Pensions in the Public Sector

Edited by

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Chapter 11

The Life and Times of a Public Sector Pension Plan Before Social Security

The U.S. Navy Pension Plan In the Nineteenth Century

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Military pensions have a long history in Western civilization as the practice of rewarding loyal warriors dates from antiquity. Pensions for military personnel have been established prior to the development of pensions for other public sector employees, and military pensions have also predated pensions for workers in the private sector. Standardized systems of military pensions existed as early as the sixteenth century in England. During its 1592–93 session, Parliament established “reliefe for Souldiours . . . [who] adventured their lives and lost their limbs or disabled their bodies” in the service of the Crown (Congressional Research Service, n.d. p. 5). Annual pensions were not to exceed 10 pounds (roughly 50 Spanish gold dollars at subsequent exchange rates) for “private soldiers,” or 20 pounds for a “lieutenant.” The English were not alone in providing pensions for their soldiers, as Spain also maintained pensions for its Imperial forces. Although a formal pension plan was not established until the eighteenth century, the Spanish Crown had financed military pensions beginning in 1613.¹

The Continental Congress established pensions for American military personnel shortly after the onset of the American Revolution, creating a naval pension plan in 1775 and an army plan in the following year. In 1800, Congress established the U.S. Navy pension plan to finance the payment of pensions to qualified naval personnel. Over the next century or so, Congress passed dozens of acts covering various aspects of naval pensions including rules pertaining to eligibility, coverage, benefits, and funding. In the absence of (and occasionally even in the presence of) some historical

context, many of the characteristics of these acts seem idiosyncratic at best. This study reviews the history of the U.S. Navy pension plan from its inception until World War I, focusing on several economic and policy lessons that emerge from the operation and management of the plan. These historical events provide an interesting background for the development of public and private pensions in the United States. In addition, insight gleaned from the development and management of the navy pension plan in the nineteenth century has considerable relevance for contemporary debates regarding today's social security system.

Creation of U.S. Naval Pensions

Shortly after the onset of the American Revolution, the Continental Congress established a pension plan for naval personnel to be paid out of a fund financed by the sale of prizes captured by the Revolutionary Navy. Unfortunately, neither the pension fund nor its records survived. Legislation passed by the U.S. Congress in 1797 and 1798 revived the navy pension plan, and in 1800, a fund for the payment of benefits was formally established.²

Today the term "pension" generally refers to income payments in retirement after the end of a working career. In the nineteenth century, however, a wider range of retiree benefits, survivor's annuities, and disability payments, were also considered as pensions. In the beginning, the navy pension system was primarily a disability pension plan, although the way in which the navy defined disability often included superannuation—that is, incompetence due to infirmities associated with old age. Over time, however, the fund was called on to support dependents of deceased seamen and ultimately to provide old-age benefits. Thus, at one time or another, the fund was responsible for providing the same range of benefits as the modern social security system, although the size and scope of the twentieth-century social security system far exceeds that of the nineteenth-century navy pension plan. Before providing a detailed history of the navy pension system, two interesting characteristics of the fund's creation are worth noting. These are the early date at which the pension system was established, and the motivation for creating a funded plan rather than a pay-as-you-go system.

Broad-based pension systems for military personnel date from sixteenth century England, but America's first formal, nonmilitary, employer-provided plan was established by American Express in 1875. By the turn of the century, only a handful of private companies, mainly railroads, had adopted retirement pension plans (Latimer 1932). For the most part, disabilities incurred on the job were covered by the common law associated with negligence liability (Fishback and Kantor 1998). While a few municipalities provided pensions for police officers, firefighters, and teachers before 1900, the first pension plan for state employees was established by Mas-

sachusetts in 1911, and the federal civil service pension plan was not created until 1920 (Craig 1995).³ So by the standards of other professions and sectors of the economy, pension plans for U.S. military personnel were established very early in our nation's history. There are sound economic, in addition to patriotic, reasons for the early use of pensions by the military.

Pensions are a form of deferred compensation that can be used to bind workers to firms for longer periods than would be the case if spot wages—that is, current compensation for current work—were the only form of compensation.⁴ Therefore, one would expect to see pensions in firms and industries in which long-term employment was particularly valuable or conversely in which turnover was costly. These conditions are most likely to be present in firms that provide large amounts of firm-specific human capital and in those in which the tasks of one worker are closely related to those of another. Such characteristics describe the types of large bureaucratic firms that became prevalent in the United States in the late nineteenth century (Chandler 1977, 1990).

Before that time, most Americans worked on family farms (either tenant or owner-operated) or in artisanal shops. In either case, most workers, with the notable exception of slaves, could aspire to one day own the means of production. The ownership of farms, shops, and equipment often provided insurance for disability and old age. Late in the nineteenth century, this economic system was gradually being replaced by the rise of large corporations. Thus, it is not surprising that early pension plans were found among railroad companies, utilities, and communication firms. These were quickly followed by manufacturing firms and public sector employers.

This analysis only explains why pensions did not exist during the first half of the nineteenth century in other sectors of the economy; however, it does not explain why plans were established prior to 1800 for the army and the navy. Military organizations are inherently hierarchical, and the military relies on longevity to fill its upper ranks of noncommissioned and staff officers. As a result, the typical career path involves promotion through the ranks. In the process of moving up the ranks, soldiers and seamen acquire a great deal of firm-specific human capital. This arrangement of long-term employment contracts along with internal promotions makes the military services good candidates for the use of deferred compensation, such as pensions, as a key element in total compensation (Lazear 1979).

It is interesting to note that in the United States much of the legislation providing pensions for the military was designed to provide benefits for soldiers of specific wars or campaigns. The use of war-specific pensions is consistent with the other primary characteristic of jobs that offer deferred compensation. Specifically, soldiering typically includes job assignments that require employees to work relatively closely together; thus the productivity of one worker depends on that of another. Soldiers who left the trenches to

go home for spring planting presented officers, not to mention their comrades on the line, with a particularly difficult situation. Although conscription and the Uniform Code of Military Justice were certainly valuable tools against turnover (desertion), deferring a portion of a soldier's compensation also enabled managers to increase the total productivity (fighting ability) of the group. Finally, tying the lifetime wealth of the warrior class to the long-run viability of the political regime promising to pay the deferred compensation made sense from the regime's perspective.

All of the above factors were particularly important during the American Revolution, when American military pensions were created (1775). The plans were later revised. In order to keep the troops in the field during the crucial months leading up to the Battle of Yorktown (1781), the Continental Congress promised to pay any officer remaining in the service for the duration of the Revolution a life annuity equal to one-half his base pay. Unfortunately, it was not long before Congress realized that the present value of its future tax revenues were insufficient to meet that promise. In the Spring of 1783, Congress therefore converted the life annuities to a fixed term payment equal to full pay for five years. Even these obligations were not paid to qualifying veterans, and only the direct intervention of George Washington prevented a coup attempt by disgruntled officers (Ferguson 1961; Middlekauf 1982). Fortunately, the Treaty of Paris was signed in September of 1783, and the Continental Army was furloughed shortly thereafter. It took another eight years before the Constitution and Alexander Hamilton's financial reforms placed the new federal government in a position to honor its pension obligations.

Throughout most of the nineteenth century, navy pensions were paid from a fund financed by the sale of prizes, whereas army pensions were paid from general revenues. This difference in the methods of funding army and navy pensions is consistent with economic theory. Indeed, tying the compensation of naval personnel directly to their performance by granting them a share of the prizes they captured was a time-honored tradition.

Economic exchange can occur either in a pure market system in which all transactions occur between atomistic agents, or through organizations such as firms or government entities.⁵ The advantage of the market system is that there are no monitoring costs. In other words, everyone is literally a free agent who self-monitors and every transaction is a new contract. The disadvantage is that such contracting and recontracting is costly. This is one explanation of why organizations such as firms exist. Bringing some transactions inside the organization lowers the number of firm-to-firm transactions and thus reduces contracting costs. One disadvantage of an internal labor market is that self-monitoring inherent in the price system must now be replaced with employee monitoring within the firm. It is the trade-off in costs, trans-

acting on the one hand and monitoring on the other, that determines the optimal scale and scope of an organization (Coase 1937).

Assessing the advantages of the market system versus the firm in the context of military activities, in general, and those of the navy in particular, we see that the objectives of the government would be difficult to achieve using a pure market system. Although naval operations are by definition an activity of the state, naval objectives conceivably could be carried out through a market system by subcontractors rather than by military personnel. Indeed, privateers—that is, holders of letters of marque and reprisal—fulfilled just such a role for many governments until the twentieth century.⁶ During these times, privateers served as state-sanctioned pirates or mercenaries on the high seas.⁷

One problem with relying on private contracting for national defense is that the cost of such contracting can be prohibitive. Throughout history, governments that trusted their defense to mercenaries often found themselves renegotiating their contracts at crucial points, frequently when the enemy was at the gates.⁸ Furthermore, monitoring the terms of the contract was costly. Mercenary forces in the field or privateers at sea might systematically shirk by avoiding conflict, but they could still demand pay for services rendered. Who was to force them to honor the contract? Such situations with privateers were partly alleviated by awarding compensation based on performance.⁹ This was done by creating share contracts, with privateers receiving a portion of all prizes successfully liquidated through prize courts.¹⁰

The tradition of sharing prizes with officers and sometimes the crews of ships of war survived the creation of modern navies. Although land forces occasionally supplemented their earnings by pillaging, the sack, as a formal means of compensation, was generally abandoned by Western powers with the rise of the nation state and the establishment of professional armies.¹¹ Why did modern navies adopt a form of compensation associated with privateers, while armies relied exclusively on tax revenues to formally compensate their troops?¹² The answer lies in the different costs of monitoring the performances of the two groups. An army unit typically works in close association with other army units and its effectiveness is relatively easy to monitor. For example, positions on the battlefield are either taken or successfully defended. In the age of sail, however, relatively small naval units typically worked in isolation, often for long periods, having little contact with either other units or the admiralty. As a consequence, directly monitoring their performance could be quite costly, even had it been possible. Indeed, the primary tasks of navies in the age of sail were blockade enforcement and commerce raiding—that is, attacking merchantmen of belligerent states—both of which could be hazardous and either of which could be avoided quite easily. If a ship's company went to sea with none of its com-

pensation tied to performance, it would have been relatively easy to shirk these primary duties; however, once crews were guaranteed some portion of the prizes they captured, the costs of shirking increased. Every blockade runner not overtaken was compensation foregone by the ship's crew.

Given the incentive to defer or backload a certain proportion of a seaman's compensation through pensions, and given the fact that prizes often made up a portion of the crew's current compensation, it was only natural that the two features would be combined and thus that naval pensions would be funded from prize monies. So from its inception the pension plan for naval personnel was designed to be funded from the assets of the plan. In practice, unfortunately, the flow of prize monies did not always match the plan's legislated liabilities. The lack of actuarial assessments linking inflow and outgo of funds, coupled with the political pressures faced by Congress, and its responses to those pressures made for a rather colorful history of the navy pension plan, a history to which we now turn.

Navy Pension Plan Before the Civil War

The Continental Congress created a funded pension system for the Revolutionary Navy in 1775, but this fund did not survive the Revolution.¹³ However, a revised pension plan continued to exist, and from 1790 through 1797, benefits were paid to naval (and army) personnel from general appropriations. In July 1797, new legislation was passed that provided disability pensions to officers, marines, and seamen injured in the line of duty. The pension amount, which was not to exceed half pay for officers or \$5 a month for marines and seamen, was based on the extent of the disability in both cases (Seybert 1818). Additional legislation was enacted in 1798, 1799, and 1800 to establish a separate pension fund for naval personnel. The 1800 act provided that "every officer, seaman and marine, disabled in the line of his duty, shall be entitled to receive for life, or during his disability, a pension from the United States, according to the nature and degree of his disability, not exceeding one-half of his monthly pay" (*American State Papers* 1834: 487).¹⁴ The fund was to be financed through the sale of prizes including captured ships of war, merchantmen of belligerent states, and neutral merchantmen carrying contraband.

The laws establishing the navy pension fund specified the fund's administrative organization as well as eligibility conditions for receipt of pension benefits.¹⁵ Fund management was placed under the secretaries of the Navy, Treasury, and War Departments. The 1799 legislation directed pension fund commissioners to invest all funds in "six percent or other stock [bonds] of the United States, as a majority of them, from time to time, shall determine to be most advantageous." However, legislation enacted in 1800 authorized

the commissioners to invest fund monies "in any manner which a majority of them might deem most advantageous" (Seybert 1818: 692).

In 1809, taking advantage of this investment flexibility, the commissioners purchased a large number of shares in a local bank, the Bank of Columbia. Additional purchases of shares in the Bank of Columbia and new investments in two other local banks, the Union Bank and the Washington Bank, were made during the next decade. Before these purchases, all assets of the fund had been invested in U.S. bonds, which were relatively safe investments compared to equity positions in local banks. The investment in private equities resulted in a loss of income from the nonpayment of dividends, and the eventual loss of capital when the Bank of Columbia failed in 1823–24. This failure occurred at a time when the fund was experiencing increasing obligations to pay benefits.¹⁶

Historical data on interest and dividend earning assets of the navy pension plan, annual returns on its portfolio, number of beneficiaries, total amount of annual benefits paid, and average benefit per recipient for years between 1800 and 1842 appear in Table 1. Over time the number of beneficiaries increased as did benefits per capita and total annual pension expenditures.¹⁷ In 1801, there were 22 pensioners receiving annual benefits of \$1,605 (\$72.95 per recipient). By 1842, the number of beneficiaries had increased to 946 and had an annual cost of \$220,053 or \$232.61 per recipient.¹⁸

The number of pensioners and the level of benefits in the navy plan generally trended upward over the first half of the nineteenth century. Instead of focusing on the long-run actuarial conditions facing the fund, Congress seemed to react to the absolute size of the fund. When fund assets increased, new legislation was passed expanding coverage and increasing benefits. For example, in 1813, widows of navy personnel who died from wounds incurred in the line of duty were extended benefits equal to half the monthly pay of the deceased. Payments were to be made for a five-year term and could be renewed for additional five-year terms. If there were no surviving widow, children of the deceased who were under 16 years old could receive survivor's benefits. Further, in 1816, commissioners were authorized to issue benefits in excess of half pay in cases of hardship.

Extension of benefits to widows and orphans coupled with the growth in numbers of naval personnel during the War of 1812 dramatically increased amounts paid out by the pension plan. In 1816, pension payments were made to 327 veterans, widows and orphans totaling \$27,627. Additional coverage was extended in 1817 to widows and orphans whose husbands or fathers had ultimately died as a *result* of disease or casualties incurred during naval service. To receive benefits, dependents were required to show only that the veteran's death was in some way connected to his previous service. Pension expenditures rose sharply with this extension, and by 1823, a total

TABLE 1. History of the U.S. Navy Pension Plan, 1800–1842

<i>Year</i>	<i>Number of pensioners</i>	<i>Annual^a outlays</i>	<i>Per capita outlays</i>	<i>Value of^{b,c} plan assets</i>	<i>Annual^d returns</i>
1800	—	—	—	\$ 26,552	1.84%
1801	22	\$ 1,605	\$72.95	56,556	8.40
1802	—	—	—	79,056	6.94
1803	37	3,567	96.40	126,325	6.69
1804	37	3,261	88.13	129,712	7.05
1805	49	4,413	90.06	164,595	6.37
1806	65	5,298	85.51	165,963	8.05
1807	78	6,396	82.00	177,344	8.01
1808	85	6,863	80.74	175,460	8.21
1809	90	6,671	74.12	220,397	5.15
1810	93	7,043	75.73	192,809	7.69
1811	107	8,045	75.19	206,076	7.75
1812	122	9,287	76.12	210,701	8.17
1813	148	11,273	76.17	206,076	5.29
1814	176	13,667	77.65	484,852	6.47
1815	252	20,547	81.54	598,557	6.56
1816	327	27,627	84.49	594,041	5.49
1817	358	32,036	89.49	724,950	7.19
1818	—	34,970	—	877,236	6.52
1819	438	39,340	89.82	874,672	6.60
1820	480	43,863	91.38	870,862	6.01
1821	491	44,488	90.61	891,895	5.98
1822	431	38,772	89.96	906,662	5.81
1823	423	37,248	88.06	910,515	5.38
1824	524	—	—	819,436	5.66
1825	524	—	—	900,166	5.51
1826	533	49,653	93.16	917,902	5.17
1827	534	—	—	911,252	5.21
1828	570	—	—	642,633	6.31
1829	596	—	—	950,675	3.81
1830	536	31,938	59.58	967,081	4.38
1831	536	—	—	1,003,880	3.43
1832	—	—	—	937,047	4.00
1833	—	—	—	947,545	5.53
1834	—	—	—	1,142,462	4.38
1835	442	54,083	122.36	1,160,162	4.31
1836	466	58,009	124.48	1,143,639	4.45
1837	678	200,689	296.00	1,049,232	—
1838	847	216,042	255.06	390,832	—
1839	901	223,045	247.55	253,139	—
1840	914	221,675	242.53	158,739	—
1841	959	226,825	236.52	23,600	—
1842	946	220,053	232.61	—	—

Sources: Authors' calculations based on Clark et al. (1999a, b) and from original sources cited therein.

TABLE 1. Continued

^aThe figures from 1837 through 1842 include two extraordinary treasury remittances resulting from the act of 1837. These remittances appear to have been passed "straight through" a cash position to beneficiaries. ^bThe figures in this column exclude cash holdings; therefore annual returns less outlays do not equal the change in the value of the fund's assets. ^cThe value of the plans assets varies according to whether the assets are valued at cost or in terms of par. It is not always clear which definition is being used in the original sources. ^dAnnual returns are the ratio of asset earnings to the value of plan assets, *excluding cash and bank deposits*; therefore, the figures in this column overstate the actual returns to the plan's assets.

of \$37,248 was being paid annually to 423 beneficiaries. This provision was repealed in 1824, but despite this change, the number of beneficiaries continued to rise and reached 596 by 1829. The fund also continued to increase, and its assets reached \$950,675 the same year.

By the early 1830s, the pension plan had assets totaling almost \$1 million and the number of pensioners had begun to stabilize. Congress once again chose to increase benefits and expand coverage. Given income and expenditure expectations, it seems unlikely that by today's standards the pension plan would have been considered adequately funded at this time. On the revenue side, plan commissioners should have anticipated a decline in new monies flowing into the fund due to the lack of future naval prizes, and they should have anticipated that benefit payments would increase with the aging of the veterans of the War of 1812.

However, in June 1834, Congress restored the widow and orphan benefits that had been in effect between 1817 and 1824. Furthermore, this legislation extended benefits to widows of officers, seamen, and marines who had died *since* 1824. This extension of benefits resulted in "a heavy charge [being] made upon the fund" (*American State Papers* 1836, p. 863). The number of widows receiving pension benefits under all previous acts totaled 56; the 1834 legislation added 80 widows to the rolls, increasing benefits paid by \$20,031 annually, an amount equal to nearly 40 percent of total navy pension expenditures (*American State Papers* 1836: 863).

In November 1835, fund assets totaled \$1,160,262; income for 1835 was \$66,083. Expenses included \$23,842 paid to 306 disabled veterans and \$30,241 to 136 widows and orphans. In assessing implications of the 1834 legislation, the fund's commissioners deplored Congress's apparent lack of foresight in expanding benefits at that time. By 1837, the fund had increased to \$1,049,232 and interest and dividends were more than \$50,000. And once again, Congress expanded benefits with the Jarvis Act, which provided that pensions be paid to widows and orphans retroactively from the dates of veterans' deaths. In addition, pensions granted to veterans were now to be paid from the time they became disabled. This meant that the navy pension plan had to make one-time, lump-sum payments covering arrears from the time of death or the onset of the disability to the awarding of beneficiary status.

The pension plan immediately encountered heavy liabilities associated with this expansion of benefits.

Plan commissioners once again opposed this expansion of pension benefits. Payment of back benefits to individual claimants ran as high as \$6,000 to \$8,000, roughly 5 to 9 percent of the total annual outlay at that time. The number of pensioners increased to 847 and annual expenditures to \$216,042 including arrears. "Arrears payments for these pensions soon consumed nearly \$600,000. Between March 3, 1837, and October 1, 1838, about \$725,000 of the invested capital of the fund was sold, and the proceeds, with the interest and dividend on the capital were applied to payment of pensions and arrears" (Glasson 1918: 104).

Columns 2 and 3 of Table 1 include these extraordinary expenditures for past claims after 1836. Total expenditures, including the extraordinary benefits, are more than double the per capita outlays from that date (Clark et al. 1999b). After the 1837 legislation was passed, fund assets plummeted over two years from \$1,049,232 to \$253,139, and by 1841, Congress had to appropriate general tax revenues to make up the shortfall to continue paying pensions to beneficiaries then enrolled. This process of appropriating general tax revenues continued until the plan was reconstituted during the Civil War. The history of legislation regulating the navy pension plan demonstrates that Congress, at times when plan assets were growing rapidly, choose to expand coverage, often beyond the plan's actuarial capacity. The ultimate result was a shifting of the plan's liabilities to taxpayers.

Management of the Navy Pension Plan

Prize monies that provided the basic capital for the plan were not consistently identified in the annual reports of the commissioners. Available data indicate large fluctuations in plan revenues. The irregularity of the flow of prize money into the pension plan is evident from the plan "Statement of the Condition of the Navy Pension Fund," issued in 1829 (*American State Papers* 1829: 323).¹⁹ Between 1814 and 1828, the plan received a total of \$451,694 from the sale of prizes. Annual revenues from these sales peaked in 1814 at \$150,367 and in 1819 at \$174,848; however, in six of the fifteen years, no revenues were received.

A sensible portfolio management strategy would have been to convert prize proceeds into a regular income flow to match the somewhat more regular payments to pensioners. With a buy and hold strategy for government securities redeemed at par, capital gains and losses would depend on whether the original assets were bought at a premium, yielding a loss, or at a discount, yielding a gain.

From 1800 through 1808 the fund's portfolio was invested in U.S. government stocks (bonds) in a mix of coupon amounts—Sixes, Eights, and

Threes (the names for the securities refer to their coupon rates). Although the Threes had a lower coupon, the price in Philadelphia in 1805–6 ranged between \$59 and \$64, indicating a current yield of about 5 percent (Sylla et al. 1997). Sixes issued to upgrade the navy were redeemed by the federal government in 1807, and the proceeds to the fund were invested in Threes and Sixes issued for the purchase of the Louisiana Territory.

Proceeds from the sale of the Eights, redeemed in 1809, were invested in the stock of a private local bank, the Bank of Columbia, the first example of private investment of public pension funds.²⁰ Additional shares of Columbia Bank, as it was often called, were purchased in 1810 and the stocks of Union Bank and Washington Bank were purchased in 1811 and 1812 in what appear to have been “initial public offerings.” Over the period 1809 to 1813, \$89,703 was spent on the purchases of these local bank stocks, which meant that 44 percent of the plan’s portfolio was invested in private, locally traded securities.

The fund grew rapidly during this period increasing from \$26,552 in 1800, to over \$200,000 in 1813, as prize receipts, income, and gains annually outstripped payments to pensioners. Between 1809 and 1813, investment opportunities were plentiful for buying nationally and internationally traded securities. U.S. government debt alone was approximately \$50 million, and therefore provided ample opportunity for the plan’s commissioners to restrict plan investments to government securities. There is some evidence that area commercial banks were paying dividends of approximately 7 to 8 percent indicating a higher market return than could be achieved from holding government securities. For example, the Bank of the United States paid annual dividends from July 1792 through 1810 of over 8 percent of par, but this asset was never held by the fund (Perkins 1994). Columbia Bank paid dividends of \$3,730 to the fund in 1810. This represented a 6.2 percent return on monies invested. Similar dividends were realized from the Union Bank and Washington Bank.

The decision to forfeit liquidity in favor of adding risk from holding these three local bank stocks for the potential of an additional 1 or 2 percent return (above that of U.S. debt) appears unconventional. Bank and insurance stocks were the first private equity stocks traded in the United States, but ownership of these stocks came with considerable risk. Of the first eight banks chartered in Washington, D.C., three had failed by 1831, and one had been merged with one of these failed banks (Gallatin 1831; Fenstermaker 1965). The brief financial panic of 1837 brought about a number of other bank failures.²¹ This observation is important in light of the fact that the fund managers chose not to invest in the Bank of the United States, a private bank of which 20 percent was owned by the federal government.

The three local bank stocks were acquired in “half” and “whole” shares and the subscription schedule for initial investment in these stocks was an

arrangement similar to a time purchase plan in which one could initially purchase, or make a "down payment" on, a whole share by purchasing a half share. It is possible that the market price was paid for an exchange or that these purchases were arranged in some manner consistent with the initial offerings of the capital stock. Because these, as well as subsequent, bank stock transactions were made through the navy's agent, George MacDaniel, who made these and other trades on his own account, this approach to fund privatization has the scent of insider trading—that is, MacDaniel used his access to information and his control over transactions as the fund's agent to make profitable trades on his own account.

By 1829, the fund had grown to almost \$1 million.²² Assets purchased in 1814 and continuing through 1824 were concentrated in the new sixes issued to finance the War of 1812. However, additional purchases of Bank of Columbia stock were made in 1815, 1818, and 1819. These purchases brought total expenditures for Columbia Bank stock to \$99,502. According to the authorized amount of capitalization of Columbia Bank (\$1 million), the plan owned almost 10 percent of the bank. In 1819, the plan's total holdings of private securities was \$129,266 of the enlarged total portfolio of \$874,672; therefore, at that time, 15 percent of the plan portfolio was held in private stocks.²³ Columbia Bank, which stopped accepting new business in 1823, ceased all active operations in 1828. The plan's acquisition of private assets inevitably increased the risk associated with its portfolio. Then with the failure of Columbia Bank, the downside of such acquisitions became apparent as the plan lost roughly 10 percent of its value.

In any pension plan, investment decisions and risk-return calculations should include analysis of who benefits from the greater returns and who must bear losses associated with adverse events. In the private sector (prior to the Employee Retirement Income Security Act, ERISA) the owners of the pension fund and/or the plan's participants would absorb such a loss. For the navy pension fund, this was not the case. In July 1834, the pension fund received \$167,164, representing the value of lost equity and foregone interest and dividends "From the Treasurer of the United States, for Columbia Bank stock purchased of the navy pension fund by the United States, per act of Congress, approved 30th June 1834."²⁴ Thus, it was the taxpayers who bailed out the pension fund as Congress assumed the risk of privatization on behalf of the taxpayers *ex post facto*. Not coincidentally, all of this occurred at the same time that Congress restored the widows and orphans benefits, as discussed previously.

From 1830 to 1836, the plan's total portfolio remained rather constant at approximately \$1 million, but it fell sharply by 1838 when securities were sold to meet increased pension obligations associated with the Jarvis Act. Interestingly, as the threes were being redeemed in 1832, the plan, at the direction of the navy, made large purchases of stock of the Second Bank of

the United States.²⁵ Restricting purchases to the Second Bank of the United States was linked to failure of Columbia Bank and also to the practice of paying commissions to agents of the plan while they were being paid to disburse pension payments.²⁶ The navy directive came after several audits of the pension plan and much correspondence from the commissioners requesting reimbursement because they could not pay widow and orphan benefits. After its federal charter expired in 1836, the Second Bank of the United States was rechartered in Pennsylvania, where it eventually failed; it was liquidated in February 1841 (Hammond 1957; Smith 1953).

To compensate for the loss incurred in the stock of the Second Bank and to help the plan meet its obligations to pensioners, the Treasury, from October 1837 through the end of September 1838, deposited \$510,353 in principal and interest to the plan's account.²⁷ This action represented the second taxpayer bailout of the navy pension plan. The plan, in addition to its bank stock problems, encountered further financial woes when several states defaulted on their debts (Sylla and Wallis 1998; English 1996). These defaults and the accompanying reduction in bond prices occurred while the fund was selling securities to meet pension obligations. The value of the plan's portfolio declined from \$253,139 at the end of 1839 to virtually zero by the end of 1841. The only assets remaining in the plan by this time were shares in the Union Bank and Washington Bank, which were almost worthless. So the navy pension plan was dissolved in 1841, and Congress began paying pensions from general tax revenues.

In an audit of the navy pension plan following the failure of Columbia Bank, a number of facts emerged which indicated that the plan had been poorly administered. There was evidence of excess commissions paid to agents for purchasing assets for the portfolios, commingling of agents' funds to pay pensions and manage the portfolio, receipt by agents of dividends and bond coupons that were not remitted to the fund, and failure to make prompt reinvestment of portfolio income flows (Clark et al. 1999a). These problems were further complicated by the decline of investment opportunities in the national financial markets associated with the paying off of the national debt by 1832 (Bayley 1882; Elliott 1845) and the default by various states on their debt.²⁸ As a result of the audit, the plan was directed to buy only stock in the Second Bank of the United States. Taken together, these problems suggest the plan would have had serious problems in maintaining solvency in the 1840s even if Congress had not increased the navy's liabilities by expanding coverage in the late 1830s.

Navy Pensions After the Civil War

Twenty years after the liquidation of the navy pension plan, the nation was torn by the Civil War and faced the possibility of secession of its south-

ern states. From the outset of the war, a primary component of the Union's strategy required blockading the Confederacy. This situation provided both a new cohort of claimants for benefits from the navy pension plan and a large number of potential prizes to finance a new fund. By the middle of the Civil War, navy pension payments had reached \$159,812 and the prizes sent to prize courts since the start of the war were valued at \$13 million. Congress reestablished the navy pension fund, directing Secretary of the Navy Gideon Welles to place half the net proceeds from the sale of prizes into the fund.²⁹

In his annual report to Congress, Secretary Welles recommended that

The moiety of prize money dedicated as a pension fund, and now accumulating, should be made a permanent investment in registered government securities. Were such the case, it is believed that the annual interest would be sufficient to meet all liabilities for naval pensions. At least two million five hundred thousand dollars can now be invested without interfering with the prompt payment of pensions. I recommend that the fund now on hand be made permanent, and that hereafter, whenever the amount shall reach one hundred thousand dollars, at least one-half shall be invested in registered government securities bearing six per cent interest. (U.S. Navy 1863: xxx)

Congress approved this proposal in July 1864 and Welles purchased \$5 million in U.S. government bonds during the rest of 1864. Thus, navy pension liabilities were again—at least nominally—transferred from the Treasury to the navy pension fund. By the end of 1864, gross proceeds from Civil War prizes exceeded \$14 million. After expenses and payment to the captors, roughly \$6.5 million remained for the navy pension fund. Pension outlays were \$189,659 in 1864, which left approximately \$1.3 million in cash in the fund. In his 1864 report, Welles proposed to purchase another \$2 million in registered securities. One must assume he anticipated either that an additional \$700,000 in prize monies would be forwarded to the fund or that the cash position of the fund was substantially larger than \$1.3 million because of other prizes not included in the \$14 million he had reported up to 1864. In either case, Welles asserted that the \$7 million to be invested by early 1865 in six percent government bonds would yield \$420,000 a year in interest and would be “sufficient for the payment of the entire pension roll . . . without calling upon the national treasury” (U.S. Navy 1864: xxxviii).

In his final report covering the Civil War years, Welles listed the total value of prizes taken during the war as \$21,829,543. After accounting for expenses incurred in adjudicating and processing the prizes and after subtracting the captors' shares, prize monies allocated for the navy pension fund amounted to approximately \$10,251,000, with several “important cases still before the courts” (U.S. Navy 1864: xxxviii). The secretary stated that by January 1866 those monies would be fully invested in government bonds; however, at the close of 1865, the fund held only \$9 million in bonds. Thus, the plan either

maintained a more favorable cash position than it appeared or the difference between monies expected from prize courts and that which had been invested was held up somewhere along the line. In any case, during 1865, expenditures from the fund had reached \$250,000; so it appeared the plan was indeed solvent for the foreseeable future.

Welles remained optimistic concerning the financial status of the plan noting that plan income would "if rightly husbanded, be ample to meet the requirements of the government for the payment of naval pensions, without any tax upon the people" (U.S. Navy 1865, p. xxx). Welles's repeated assurances that the navy pension plan would not impose any new burden on the taxpayers leads one to suspect that he was aware of the history of the navy pension plan in the first half of the nineteenth century.

Ultimately the prizes still being adjudicated in 1865 plus the plan's net earnings (interest less expenses) after that date yielded another \$5 million; \$2.75 million in 1866, \$1.25 million in 1867, and \$1 million in 1868. These monies were also invested in government bonds. By the end of 1868, the total (par) value of the plan's holdings of U.S. Treasury liabilities was \$14 million, all of which paid six percent interest.³⁰ It appears the plan maintained a small cash position as well. The growth in the plan's portfolio corresponded with an upward trend in annual outlays (roughly \$270,000 in 1866, \$320,000 in 1867, and \$391,000 in 1868).

At this time, the plan seemed solvent under any reasonable set of assumptions. With nearly 100 percent of the plan's portfolio invested in treasury bonds paying a 6 percent coupon, the plan generated sufficient annual income to pay current benefits based on existing coverage, eligibility, and benefit standards. Welles must have thought so because he formally requested both an increase in benefits and an expansion in the number of persons covered by the plan.

In response to the plan's growing balance in 1866 he wrote: "Further legislation is therefore required in order that 'the surplus shall be applied to the making of further provision for the comfort of disabled officers, seamen and marines'" (U.S. Navy 1866: 37), and a year later he added:

I recommend, therefore, that the pension laws applicable to the navy be revised, and such an increase in the rates of pension be authorized as the fund will warrant. The entire principal of the fund was earned by the officers and men of the navy. . . . It may also be well to consider whether the family of a person dying in the navy after a specified time of service should benefit from this surplus fund, even though the death should not have occurred in the strict 'line of duty.'" (U.S. Navy 1867: 25)

In July 1868, Congress granted half of Welles's request. It revised the pension law as it applied to the navy pension plan, but rather than increase pensions or expand coverage, it enacted legislation that altered the character of the assets held by the plan and in so doing lowered returns from these

assets. This fundamentally altered the navy pension plan for the rest of its existence.

Specifically, the legislation authorized the treasury to exercise an implicit call option on the \$14 million in treasury bonds held by the plan. None of the sixes issued during the Civil War (and probably held by the fund) were redeemable before five years from their date of issue, and all were trading above par; this suggests that the fund experienced a substantial capital loss as a result of this congressional action. In addition, Congress replaced these bonds with a special issue of three percent nonnegotiable treasury liabilities. We have found no evidence that these bonds ever existed except in treasury and navy department accounts.

This legislation generated lengthy and acrimonious debate. Representative F. A. Pike, congressman from Maine, called the pension fund, as it was constituted during the war, a "contract" and labeled the legislation altering it "a breach of faith on the part of the Government" (*Congressional Globe* 1868, p. 1335). This statement was followed by a lengthy recitation on the history of antebellum navy pension fund by Representative Benjamin Butler from Massachusetts.³¹ For his part, Secretary Welles made no attempt to conceal his outrage at what he perceived to be a gross breach of faith. In his 1868 report, he reminded Congress that the original legislation had pledged

that the money arising from the sale of prizes shall be and forever remain a fund for the payment of naval pensions and for the investment in registered bonds bearing interest in gold. It is difficult to reconcile the act of July last, which reduces the interest to three per cent in currency, with the pledge faith previously given, . . . had not the income been reduced over fifty per cent by the act of July last, the rate of naval pensions might be increased, and I should have felt it my duty to renew my recommendation for a revision of the naval pension laws for that purpose." (U.S. Navy 1868: xxvi)

Butler, by all accounts a clever politician, ultimately carried the day, and the bill passed. This action ended the U.S. navy's early experiment in both the funding of its pension plan and the use of investment in private equities as part of its financing strategy.

The exact value of the loss imposed on the plan's assets by the action of Congress is difficult to determine. Dollar value or interest yield comparisons between 1862 and 1878 are suspect in terms of whether references are to greenbacks or gold. Specie payments were suspended in February 1862, and the government issued paper currency, which depreciated. Yet a market existed between the paper currency and gold. Wesley Mitchell (1908) recorded the daily high, low, and closing prices of gold in greenbacks, yielding two sets of prices over this period. Confusion concerning the dollar value and yields of securities played a role in the congressional debate in 1868, which led to the loss of autonomy of the navy pension plan in the manage-

ment of its portfolio. Mr. Butler argued that the navy pension fund's \$13 million was balanced on the other side by a debt of the U.S. Treasury, paying out "\$319,878.25, while the interest of that fund is \$780,000 in gold" (*Congressional Globe* 1878). Although this stretched the truth in terms of the then current greenback-gold exchange rates, the argument was effective in the debate.

Another factor in Butler's argument involved the "sinking fund" of the United States. Alexander Hamilton, in his plan for the origination of the consolidation of the U.S. debt, set up a scheme to repay any indebtedness incurred by the government. That plan had proved to be effective in paying off the debt by 1832. The Civil War increased the debt from about \$50 million to \$2.4 trillion (Sylla and Wilson 1999). Butler's argument was that the excess of the navy pension plan's receipts over its obligations should revert to the Treasury for debt reduction.

The value of the navy pension plan confiscated by the Treasury in 1868 was \$13 to \$14 million in terms of greenbacks, but it had a gold value of only about \$9.5 million. The 3 percent interest remitted to the plan by the Treasury was certainly less than higher the greenback coupon rate of 6 percent or the higher gold yield at the time. However, nominal interest yields on government bonds following the Civil War until the first World War ranged between 3.5 percent and 4.5 percent (Wilson and Jones 1997).

From 1869 until World War I, with the exception of 1891, the U.S. Treasury annually credited the navy pension plan \$420,000 (3 percent of \$14 million). Indeed, the essential features of the plan continued until it was abolished by Congress in 1935. When expenditures exceeded that amount, they were paid from other naval accounts; when they were less, the navy shifted the surplus to other items. In essence, the navy pension plan was a pay-as-you-go system.

Implications

The history of the U.S. Navy pension plan shows that Congress expanded benefits in response to existing fund surpluses. These actions changed the navy pension plan from one that was intended to be funded to one that was ultimately insolvent. It is clear that the acquisition of private equities exposed the navy pension plan to substantial risk and management problems. Once the downside variability that characterizes such risk became evident, Congress shifted this risk to taxpayers and bailed out the fund on two separate occasions.

It is our view that the experience of the navy pension plan throughout the nineteenth century offers a valuable lesson for contemporary debates about the possibility of privatization of the social security system. Specifically, the history of the navy pension fund illustrates many of the challenges

that could confront social security in the twenty-first century if a portion of the assets of the social security Trust Fund is invested in private equities.

Currently, revenue in excess of current social security outlays is placed, by law, in the trust fund, which is to say that it is invested in special-issue U.S. Treasury bonds. These bonds are similar to those that Congress required the navy pension fund to hold in the late nineteenth century: both bonds are merely accounting entries in the budget of the U.S. government. Many social security reform proposals have favored diversifying social security funds into private equities and corporate bonds.³² Although the size and scope of today's social security system are considerably larger than the nineteenth-century navy pension plan, historical lessons regarding coverage and funding of navy pension benefits are revealing for today's social security reformers. We suggest that the history of the navy pension fund provides an interesting case study of potential problems resulting from investment of public pension funds in private equities.

Among these concerns is the risk that investment of the trust fund might respond to political rather than to market forces. The history of the navy pension plan provides some useful examples of problems that can arise with such an investment strategy. For example, the fact that the fund invested in riskier local banks, at least one of which was well connected politically, instead of the safer and nationally traded Bank of the United States may have been due to the opposition of President Jefferson, who adamantly opposed the existence of the Bank. This result may be a useful lesson to those favoring private investment of the assets of the social security trust fund. Will fund commissioners be immune to the political positions of the president, congressional leaders, or other public spokespersons? Also, the experience of the agent MacDaniel trading on his own account illustrates another possible concern over the investment of public trust funds in private markets. Will fund managers channel investments through their friends or those of their political allies?

Another issue associated with investment in private equities is the government's inability to shift risks associated with privatization to those persons insured by the fund. If investments in private equities are made, who ultimately bears the risk associated with adverse investment experience? This question applies to investments in private equities by either a general trust fund or through individual accounts. We also found that the bankruptcies of private firms, whose equity composed a substantial proportion of the navy plan's portfolio, ultimately required taxpayer-funded bailouts. Thus, the taxpayers in general and not the pension participants ultimately bore the risk of those investment decisions.

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Notes

1. Initially, funds to support pension payments to the English military were raised from taxes levied on inhabitants of the locale from which the soldier was impressed or in which he was born. Over the course of the seventeenth century, however, pensions increasingly were paid from general revenues of the national government. The Spanish pension system was formalized as an obligation of the state in 1761 during the reign of Carlos III, who had begun a similar project decades earlier when he ruled Naples and Sicily as Charles IV (Chandler 1991).

2. When the fund began paying benefits in 1801, eighteen years after the Treaty of Paris formally ended the Revolutionary War, there were 22 navy pensioners.

3. Before 1920, Congress granted pensions to federal employees on a case-by-case basis. For a discussion of the history of federal pensions, see Craig (1995).

4. In an era in which private disability insurance did not exist, even the disability features of the navy pension plan worked much like a retirement plan (Fishback and Kantor 1998).

5. This discussion is based largely on the analysis of Coase (1937) and Chandler (1977, 1990).

6. Letters of marque and reprisal were warrants issued to private citizens permitting them to arm private vessels for naval service. They were essentially licenses to engage in piracy with one notable exception—the captured treasure had to be shared with the government granting the warrants.

7. Although mercenaries and privateers have a long history, they have largely been displaced by the uniformed forces of modern nation states.

8. Indeed, this situation precipitated one of the most momentous events in Western history, the sack of Rome in A.D. 410 by an army of Gothic mercenaries led by Alaric. The Goths were not invaders from beyond the imperial frontier; rather they were hirelings charged with defending that frontier. Alaric, a devout Christian and formerly a loyal general, marched on Rome because he felt that he and his troops were undercompensated for their efforts (Norwich 1988, pp. 122–38).

9. This practice was essentially the same as that used by pirates since time immemorial.

10. The letter of marque gave privateers the right to arm private vessels and interdict ships of war or merchantmen of belligerent states or neutral merchantmen hauling contraband. A similar, though not quite as formal, contract was structured for mercenaries. Dating from antiquity, it was customary in both Western and Islamic civilizations that any town or city that unsuccessfully resisted a siege was subjected to three days of pillage and rape (Norwich 1988: 137; Norwich 1996: 436). The privilege of sacking a town occasionally was denied regular troops in hopes of maintaining military order among them, but woe to the general who tried to keep his mercenary forces from what they perceived as the just fruits of their labors.

11. The end of the sack as a means of compensation for ground troops was not the result of humanitarian considerations; rather it was linked to the development of the canon. Artillery made folly of hiding behind the town's medieval fortifications and fundamentally altered the course of land warfare (Keegan 1993: 320–34).

12. We say formally because looting and atrocities have remained informal wages of war well into modern times.

13. The demise of the Revolutionary navy pension system resulted after the Continental Congress, in an effort to relieve its own financial crisis, shifted the burden of pension payments to the colonies from which the seamen were recruited (Paullin 1906). Unfortunately, the public finances of many colonies were in only slightly better shape than that of Congress, and it appears the prize revenues simply went into the general accounts of various government entities that were able to claim them.

14. To actually receive a disability pension, a person had to complete an application indicating the circumstances of the injury, when it occurred, the extent of the injury, and the extent of the disability resulting from the injury. The application had to be signed by the company surgeon and commanding officer. Injuries could result in partial or total disability and the amount of pension awarded depended on extent of the disability. Pensions were forfeited if the veteran was convicted of a felony (*American State Papers* 1833: 427). In June 1812, Congress created a similar fund for privateers. The fund, which was supervised by the secretary of the navy, would receive 2 percent of all U.S. prize money. It was depleted in 1837.

15. The 1800 legislation specified that commissioners of the pension fund provide annual reports to Congress concerning the operations of the fund. These reports provide information on activities of the pension fund and are the primary source of data used in this article for the first half of the nineteenth century.

16. As the pension fund grew, the commissioners found the administrative structure of the pension system increasingly difficult to manage through three federal departments. The Commissioners eventually requested Congress to place the pension plan under a single department. In 1832, the secretary of navy was made the sole manager of the pension plan. At that time, Congress mandated that plan assets be held by the treasurer of the United States, and the secretary of the navy was directed to invest all pension funds in stock of the Bank of the United States (Glasson 1900). Reorganization of the plan's management was related to problems associated with investment in the Bank of Columbia (Clark et al. 1999b).

17. Data through 1836 are from various annual reports of the commissioners of the navy pension fund. These reports, submitted by the secretary of the navy, were required by Congress.

18. These figures include extraordinary payments—that is, payment of benefits from the time the death or disability occurred rather than from the time of application for benefits. This payment of deferred benefits was required by subsequent legislation. See below.

19. The submittal dates of the annual reports of the fund vary between September and the following January. The reports also differ from year to year in the detail and quality of the information provided.

20. Ownership and control of the Columbia Bank reads like a Who's Who of the early republic. For details, see Walsh (1940) and Cole (1959).

21. The lack of a national bank following the failure to recharter to the Second Bank of the United States may have contributed to this problem (Thorp 1926).

22. The fund's holdings are reported in detail in Clark et al. (1999a), which is available from the authors on request.

23. Between 1819 and 1829, the sixes and other government securities were being retired along with some of the new sixes. Meanwhile, the fund acquired the new debt being issued by the Treasury in the bonds bearing 4.5 and 5.0 percent coupon rates. At the end of 1829, most of the fund was invested in these securities, with a lesser amount invested in the new sixes and with the original threes.

24. Net loss to the fund from failure of the Columbia Bank was \$99,502. The difference of \$67,661 must include foregone interest (at 5.32 percent) since 1822 or so.

25. Like its predecessor, the Second Bank of the United States was a federally chartered, private bank in which the federal government owned stock.

26. This stock was purchased from the Treasury at par with no fees involved. These transactions represent subsidies, as the stock was trading at a premium at that time.

27. No stock of the Bank of the United States appears among the fund's assets after 1837 (Clark et al. 1999a). We do not know how those shares were disposed of, though it is possible they were sold by the Treasury.

28. The Second Bank of the United States failed, after it was not rechartered (with the loss by the fund being absorbed by the Treasury). The increased risk resulting from state defaults brought about a dramatic drop in the prices of state bonds, with interest rates rising to around 20 percent on those obligations (Ayres 1939).

29. This discussion pertains to the payment of pensions to Union personnel. Some of the states in the Confederacy paid extremely small pensions to their veterans. These Confederate pensions are not considered in this chapter.

30. There is no evidence in the navy secretary's reports that the securities held by the reconstituted pension fund were ever purchased or valued at anything other than par. Although the reports do not offer a detailed accounting of exactly what securities the fund held, it was probably some combination of the "6's of 1868," "6's of 1881," and the "6% 5-20s of 1865," all of which sold at a premium according to Homer and Sylla (1996) and the bond price quotations from *Financial Review* (1876-1921).

31. Butler was one of the more colorful political figures of the age. After using his political influence to secure an appointment as a general in the Union Army, he outraged southerners by confiscating slaves on the grounds that they were "contraband" and employing them in support of the Union war effort. Later he commanded the ground troops accompanying Flag-officer, later Admiral, David Farragut's famous capture of New Orleans. Butler eventually became the military governor of the city, earning the name "Beast" Butler for his uncompromising rule. After being recalled to Washington, he commanded a series of military disasters, most notably the failure to capture Fort Fisher, North Carolina. Although he spent various parts of his political career in both the Democratic and Republican parties, he was the Populists' candidate for president in 1884.

32. For a summary of these proposals and their connections with the U.S. Navy pension fund, see Clark et al. (1999b).

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III

Challenges to Public Pensions